Factors affecting uptake of biosimilars

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1. Background

- Biosimilars are copies of approved and expired patent biological medicines.[1]
- In a financially constrained health system such as the NHS, the lower cost of biosimilars presents a significant potential cost saving.
- Uptake of biosimilars varies considerably across Europe.[2]

2. Objectives

- To examine the prescribing patterns of the early marketed biosimilars (somatropin, erythropoietin and filgrastim).
- To understand whether cost or other potential factors influenced their uptake in the UK.

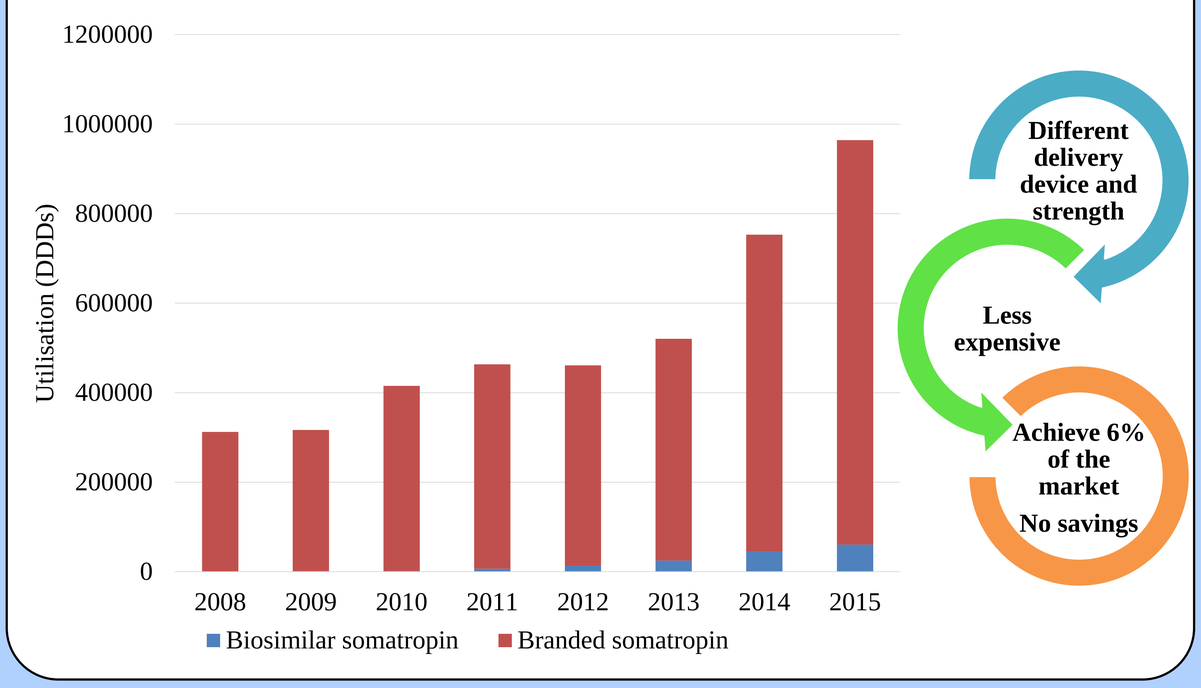
3. Methods

- Drugs selected for analysis were the early marketed biosimilars somatropin, erythropoietin and filgrastim.
- Secondary care prescribing data was extracted from the IMS Health database between 2008 and 2015.
- The volume comparator was the defined daily dose (DDDs) as defined by the World health organization (WHO).[3]

4. Results

A. Somatropin

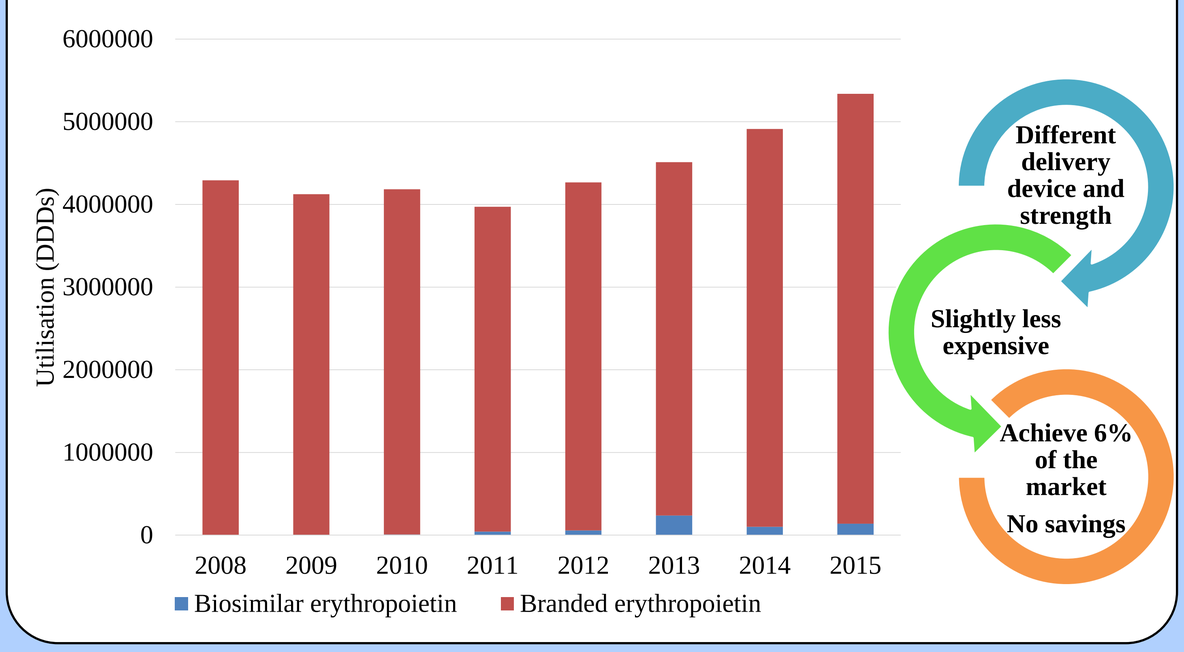
- Somatropin biosimilar (Omnitrope®) marketed since 2008.
- Utilisation of somatropin biosimilar increased slightly by 0.9% per year on average ($p<0.000$).



4. Results

B. Erythropoietin

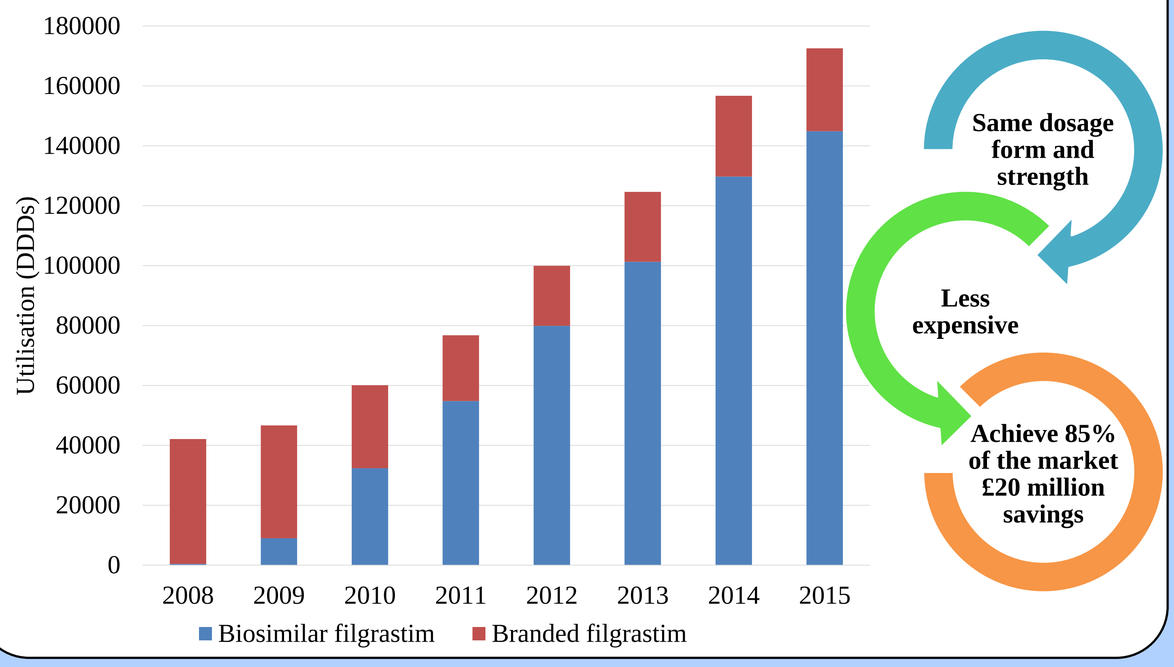
- Two erythropoietin biosimilars (Binocrit® and Retacrit®) marketed since 2008.
- Utilisation of erythropoietin biosimilars utilisation increased by only 0.45% per year on average ($p<0.025$).



4. Results

C. Filgrastim

- Five filgrastim biosimilars (Ratiograstim®, Tevagrastim®, Nivestim®, Zarzio® and Accofil®) marketed since 2008.
- Utilisation of filgrastim biosimilars increased by 12.16% per year on average ($p<0.000$).

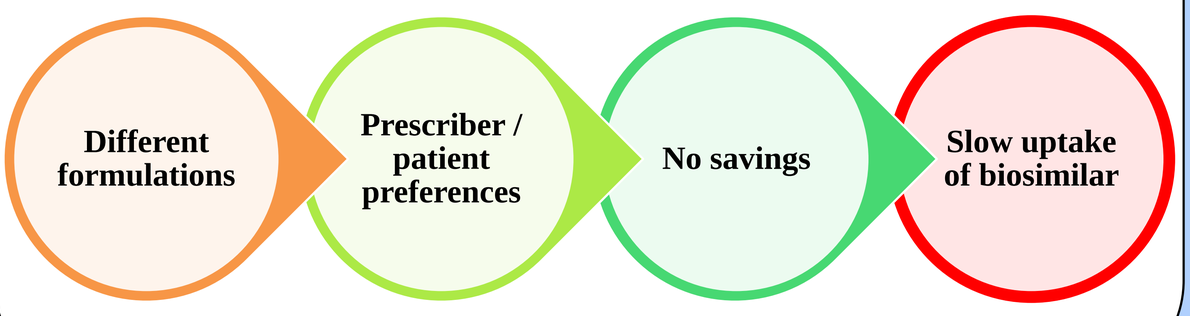


5. Discussion

- The pattern of market penetration of filgrastim biosimilars suggests that unit cost is the key driver to the utilisation for products having the same dosage form and formulation with no safety concerns.
- The very low and slow market penetration of somatropin and erythropoietin biosimilars suggests that unit cost was not the key driver to its use.
- The key differences were the differences in formulations and devices available for somatropin and erythropoietin, which increased ease of administration and potentially prescriber and patient preferences.

6. Conclusions

- The pattern of uptake of the early biosimilars suggests that cost only influences uptake in the absence of safety concerns or prescriber or patient preferences for new formulations or devices.



7. References

1. Owens, David R., et al. "The emergence of biosimilar insulin preparations—a cause for concern?." Diabetes technology & therapeutics 14.11 (2012): 989-996.
2. IMS Health. (2015). Assessing biosimilar uptake and competition in European markets.
3. WHOCC. (2015). Definition and general considerations.

8. Acknowledgements

- We are grateful to IMS Health for the supply of data.